

# HYDRO-GIS LTD

## Flood Risk Assessments and Related Studies

Hydro-GIS Ltd undertakes a range of hydrological work on the local scale for other professionals such as architects, planners, agricultural consultants, property owners, local action groups, insurance companies and local authorities. This work includes:

- Flood risk assessment for developments deemed to be at risk of flooding;
- Flood risk assessments for developments which could pose an increased risk of flooding for neighbouring properties;
- Sustainable drainage system (SuDS) design;
- Hydrological reports in order to gain credits through the Code for Sustainable Homes;
- Flood risk reports to assist with buying, selling or insuring of property;
- Reports to assist with insurance claims;
- Advice on flood mitigation measures;
- Local flooding problems;
- Expert witness and case reports for planning inquiries.

Our staff members are highly experienced in the standard methodology often required for these projects such as the Flood Estimation Handbook, IH Report 124, and ADAS 345 and have completed the CIRIA Designing SuDS course. We also undertake topographic and river channel cross section surveys. We have a detailed understanding of the Environment Agency (EA) flood risk maps. It is often the case that the Environment Agency maps as shown on the internet do not provide an entirely accurate indication of flood risk because they were generated using a very general approach. More detailed studies undertaken for a specific site can give a much better assessment of the risk.

Hydro-GIS Ltd has undertaken flood risk assessments at a range of scales, locations, and environments where the proposed development has been shown to be in an area of flood risk or may increase the risk of flooding to neighbouring properties. Projects have included the change of use of existing property, development of single dwellings to large scale rural developments such as stud farms, fish farms, dairy farms and horticultural areas.

Hydro-GIS Ltd also licences the British Rainfall Digital Archive, an archive of extreme rainfall data based on observations going back to 1866. This historical data can be used to provide a fuller assessment of flood risk at a site.

## Nottingham University Flood Risk Assessment

Hydro-GIS Ltd was requested to provide a detailed flood risk assessment for a site at Nottingham University which was shown to be a high risk of flooding according to the EA flood zone maps. The study was required in order to continue to provide insurance cover for the property. The more detailed study we undertook confirmed the risk of flooding from both river flooding and surface water flooding to be low and that it was a viable site to offer insurance. Specific activities included:

- Visiting the site to survey floor levels and identify routes of flood water ingress to the building;
- An in depth review of existing EA flood risk mapping;
- An investigation of historical flooding in the area;
- Combining modelled EA flood levels with a digital terrain model to generate more accurate flood maps;
- Using GIS to define surface water flow pathways.



*Mapping of the predicted flood extent for the study site using GIS.*